Customer No.: 31561
Application No.: 10/710,405
Docket No.: 13302-US-PA

AMENDMENT

To the Claims:

1. (currently amended) A process of fabrication a semiconductor structure, comprising:

providing a substrate;

forming a dielectric layer over the substrate;

forming a hydrophilic material layer over the dielectric layer to form a structure comprised of the substrate, the dielectric layer and the hydrophilic material layer~~, wherein residuals are formed on at least one of a upper bevel of the structure, a lower bevel of the structure, a side wall of the structure and a combination thereof~~;

performing a polish process on at least one of the upper bevel of the structure, the lower bevel of the structure, the side wall of the structure and a combination thereof~~ to remove the residues~~; and

forming a hardmask layer over the hydrophilic material layer.

Claims 2-3. **(cancelled)**

4. (original) The process of claim 1, wherein a method of forming the dielectric layer comprises a spin on coating method or a chemical vapor deposition method.

5. (original) The process of claim 1, wherein a material of the dielectric layer comprises an organic dielectric material, a carbon-containing dielectric material or a carbon-containing oxide material.

6. (original) The process of claim 1, wherein the dielectric layer is composed of at least a precursor comprising tetramethyl-cyclotetra-siloxane (TMCTS), trimethyl-silane (3MS), tetramethyl-silane (4MS), dimethyl-dimethoxy-silane (DMDMOS), octamethyl-cyclotetra-siloxane (OMCTS), diethoxy-methyl-silane (DEMS), or tetramethyl-disiloxane (TMDSO).

7. (original) The process of claim 1, wherein a material of the hydrophilic material layer comprises silane (SiH_4) containing material, tetraethyl-ortho-silicate (TEOS) oxide containing material or silicon nitride.

8. (original) The process of claim 1, wherein a material of the hardmask layer comprises aluminum (Al), titanium nitride, tantalum nitride, titanium silicon nitride (TiSiN), tungsten nitride, tungsten silicon nitride (WSiN) or refractory nitride.

Claims 9-26 (**cancelled**)

27. (currently amended) A process of fabrication a semiconductor structure, comprising:

providing a substrate;

forming a first dielectric layer over the substrate;

forming a first hydrophilic material layer over the first dielectric layer to form a first structure comprised of the substrate, the first dielectric layer and the first hydrophilic material layer, ~~wherein first residuals are formed on at least one of a upper bevel of the first structure, a lower bevel of the first structure, a side wall of the first structure and a combination thereof~~;

performing a first polish process on at least one of the upper bevel of the first structure, the lower bevel of the first structure, the side wall of the first structure and a combination thereof ~~to remove the first residues~~;

forming a first hardmask layer over the first hydrophilic material layer;

forming a second dielectric layer over the first hardmask layer;

forming a second hydrophilic material layer over the second dielectric layer to form a second structure comprised of the substrate, the first dielectric layer, the first hydrophilic material layer, the second dielectric layer and the second hydrophilic material layer, ~~wherein second first residuals are formed on at least one of a upper bevel of the second structure, a lower bevel of the second structure, a side wall of the second structure and a combination thereof~~;

performing a second polish process on at least one of the upper bevel of the second structure, the lower bevel of the second structure, the side wall of the second structure and a combination thereof ~~to remove the second residues~~; and

forming a second hardmask layer over the second hydrophilic material layer.

Claim 28 (cancelled)

29. (previously presented) The process of claim 27, wherein a method of forming the first and second dielectric layer comprises a spin on coating method or a chemical vapor deposition method.

30. (previously presented) The process of claim 27, wherein the first and second dielectric layer comprise an organic dielectric material, a carbon-containing dielectric material or a carbon-containing oxide material, respectively.

31. (previously presented) The process of claim 27, wherein the first and second dielectric layer are composed of at least a precursor comprising tetramethyl-cyclotetra-siloxane (TMCTS), trimethyl-silane (3MS), tetramethyl-silane (4MS), dimethyl-dimethoxy-silane (DMDMOS), octamethyl-cyclotetra-siloxane (OMCTS), diethoxy-methyl-silane (DEMS), or tetramethyl-disiloxane (TMDSO), respectively.

32. (previously presented) The process of claim 27, wherein the first and second hydrophilic material layers comprise silane (SiH_4) containing material, tetraethyl-ortho-silicate (TEOS) oxide containing material or silicon nitride, respectively.

33. (currently amended) The process of claim 27, wherein the ~~first and~~ second hardmask layers comprise aluminum (Al), titanium nitride, tantalum nitride, titanium silicon nitride (TiSiN), tungsten nitride, tungsten silicon nitride (WSiN) or refractory nitride~~, respectively.~~

34. (previously presented) The process of claim 27, further comprising forming a via in the first dielectric layer, the first hydrophilic layer and the first hardmask layer.

35. (previously presented) the process of claim 34, further comprising forming a trench in the second dielectric layer, the second hydrophilic layer and the second hardmask layer, and the via is exposed within the trench.